Exelon Generation Company, LLC
Byron Station
4450 North German Church Road
Byron, IL 61010-9794

www.exeloncorp.com

Exelon Nuclear

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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Byron Station Unit 1
Facility Operating License No. NPF-37
NRC Docket No. STN 50-454

Subject: Byron Station Unit 1 Sixty-Day Response to NRC Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity"

On August 21, 2003, the NRC issued NRC Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity." This bulletin requires the following information be submitted to the NRC within 60 days after plant restart following the next inspection of the reactor pressure vessel lower head penetrations:

> "a summary of the inspections performed, the extent of the inspections, the methods used, a description of the as-found condition of the lower head, any findings of relevant indications of through-wall leakage, and a summary of the disposition of any findings of boric acid deposits and any corrective actions taken as a result of indications found."

Pursuant to 10 CFR 50.54, "Conditions of licenses," paragraph (f), Attachment 1 to this letter provides the Byron Station, Unit 1 60-day response. This response is due to the NRC by December 15, 2003.

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Should you have any questions or desire additional information regarding this letter, please contact William Grundmann, Regulatory Assurance Manager, at (815) 406-2800.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

Executed on 12-12-03

Stephen E. Kuczynski
Site Vice President
Byron Nuclear Generating Station

Enclosures: Attachment 1, Byron Station Unit 1 Sixty-Day Response to NRC Bulletin 2003-02

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Byron Station

ATTACHMENT 1

Byron Station Unit 1

Sixty-Day Response to NRC Bulletin 2003-02

"Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity"

Attachment 1

Byron Station Unit 1

Sixty-Day Response to NRC Bulletin 2003-02

On August 21, 2003, the NRC issued NRC Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity." This bulletin requires the following information be submitted to the NRC within 60 days of plant restart following the next inspection of the reactor pressure vessel (RPV) lower head penetrations:

> *Within 60 days of plant restart following the next inspection of the RPV lower head penetrations, the subject PWR addressees should submit to the NRC a summary of the inspections performed, the extent of the inspections, the methods used, a description of the as-found condition of the lower head, any findings of relevant indications of through-wall leakage, and a summary of the disposition of any findings of boric acid deposits and any corrective actions taken as a result of indications found.*

Response

Summary of the Inspections Performed, Extent of the Inspections, and Methods Used

A remote visual inspection of the Unit 1 RPV bottom mounted instrumentation (BMI) nozzles (58 total) and RPV lower head was performed in Mode 5 descending during Byron Unit 1 refueling outage 12 (B1R12) in Fall 2003. The inspection, performed by VT-2 qualified personnel, examined the full circumference around each BMI nozzle on the RPV lower head using multiple passes (i.e., four total) to ensure full coverage with overlap. The inspection was performed in accordance with procedure ER-AP-335-1012, "Visual Examination of PWR Reactor Vessel Head Penetrations." The inspection used remote equipment capable of resolving the appropriate detail (i.e., VT-1/1C character height in accordance with 1992 ASME Boiler and Pressure Vessel Code Section XI, Table IWA-2210-1) at two feet. The actual distances viewed were less than two feet which gave extremely close views of the BMI nozzle to RPV lower head interface region, thereby ensuring any boric acid leakage would be easily identified.

Description of the As-Found Condition, Findings of Relevant Indications, and Summary of the Disposition of any Findings

The RPV lower head visual inspection identified no evidence of any boric acid deposits in the BMI nozzle to RPV lower head interface region. However, it was apparent the reactor cavity boot seals had leaked borated water down the side of the RPV during previous refueling outages. This was documented in the corrective action program. The RPV lower head also had a minor layer of surface corrosion with no discernable thickness that in many locations had become flaky and was easily removed with little effort. These findings were found to be acceptable as no RPV boric acid leakage was identified and no wastage was observed.

Corrective Actions Taken

There were no corrective actions taken as a result of indications found as no evidence of RPV boric acid leakage was identified. The RPV lower head and the BMI nozzle to RPV lower head interface regions were cleaned using a low-pressure (approximately 1200 psi) plain water power wash. The low-pressure wash removed the lightly adhered, flaky rust material and boron residue from the cavity boot seal leak and left the normal surface oxidation layer intact. This was done to ensure a crisp demarcation between the BMI nozzle and the RPV lower head for future inspections.